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Stevenson, Wallace

From: Lynn, John [JLynn@TesoroPetroleum.com]
Sent: Friday, April 19, 2002 9:44 AM
To: 'wallace_stevenson@kindermorgan.com'
Subject: CONVENT PREM GAS (ETHANOL).doc

MATERIAL SAFETY DATA SHEET

TESORO

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:	Conventional Premium Gasoline with Ethanol
CHEMICAL NAME:	Gasoline
MSDS DATE:	September, 1999
CHEMICAL FAMILY:	Mixed hydrocarbons, petroleum hydrocarbon distillate
CHEMICAL FORMULA:	Complex mixture

MANUFACTURER/SUPPLIER

Tesoro Northwest Company
PO Box 700
Anacortes, Washington 98221

EMERGENCY TELEPHONE NUMBERS

ChemTrec:	(800) 424-9300
Emergency Number:	
Non-Emergency Number:	(360) 293-1412
Monday-Friday 7 - 4 PST	

2. COMPOSITION/INFORMATION INGREDIENTS

INGREDIENT NAME	CAS #	EXPOSURE LIMITS[1]		CONC. %
		OSHA (ppm)	ACGIH (ppm)	
Gasoline (total product)	8006-61-9	N/A	300/500 (STEL)	100
Alkanes, cycloalkanes, alkenes, aromatic hydrocarbons	-			Balance
Xylene	1330-20-7	100	100/150 (STEL)	0-25
Toluene	108-88-3	100	50	0-25
Ethyl alcohol	64-17-5	1,000	1,000	0-10
Benzene	71-43-2	1[2]	0.5/2.5 (STEL)	0-4
n-Hexane	110-54-3	500	50	0-3
Pseudocumene (1,2,4-trimethylbenzene)	95-63-6	NE[3]	NE[3]	0-5
Cyclohexane	110-82-7	300	300	0-1
Ethylbenzene	100-41-4	100	100/125 (STEL)	0-3
Naphthalene	91-20-3	10	10/15 (STEL)	0-1

[1] Time Weighted Averages unless indicated otherwise

[2] A limit of 10ppm may apply to exemptions listed in OSHA standard 1910.1028(a).

[3] NE = Not Established

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Bronze colored, clear liquid with petroleum hydrocarbon odor. May be dyed.

Extremely flammable liquid and vapor. Liquid can accumulate static charge by flow or agitation. Vapor is heavier than air and may spread long distances. Distant ignition and flashback are possible. Liquid can float on water and may spread to distant locations and/or spread fire. Gasoline is a possible cancer hazard and may contain benzene, a confirmed human carcinogen. High vapor concentrations may cause headache, nausea, dizziness, drowsiness, unconsciousness, and death. Swallowing or vomiting of gasoline liquid may result in aspiration into the lungs.

3. HAZARDS IDENTIFICATION *cont'd.*

ROUTES OF ENTRY: Inhalation, eye, skin, ingestion

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

INHALATION: May cause irritation to the nose, throat, and respiratory tract and may produce liver and kidney damage. High vapor concentrations may produce central nervous system (CNS) depression. Other CNS effects such as headache, lack of appetite, drowsiness, and incoordination can occur. Extremely high levels may cause unconsciousness, pulmonary edema, and death.

SKIN CONTACT: Non or mildly irritating to the skin if allowed to freely evaporate. Prolonged and repeated liquid contact can cause defatting and drying of the skin, resulting in skin irritation, burns, and dermatitis. Absorption through the skin occurs but is normally not significant.

EYE CONTACT: This product is slightly irritating to the eyes. May cause temporary pain if splashed in eyes, but probably causes no permanent damage.

INGESTION: Gasoline is moderately toxic if ingested. May cause burning in the mouth, throat, and chest as well as stomach irritation, nausea, vomiting, and cyanosis. Ingestion may result in vomiting and aspiration of vapors into the lungs. Aspirated gasoline can cause chemical pneumonitis and or pulmonary edema.

CHRONIC EXPOSURE: Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is linked to the later development of acute myelogenous leukemia. Prolonged and or repeated exposure to n-hexane can cause irreversible damage to the peripheral nervous system.

CARCINOGENICITY:

Gasoline: **ACGIH:** No **NTP:** No **IARC:** Yes **OSHA:** No

Benzene: **ACGIH:** Yes **NTP:** Yes **IARC:** Yes **OSHA:** Yes

* Benzene is listed by NTP, IARC, and OSHA as a chemical causally associated with cancer in humans. Benzene has been classified by ACGIH as a confirmed human carcinogen (A1). IARC has determined that gasoline is possibly carcinogenic to humans (Group 2B). It has been reported that chronic inhalation exposure to an unleaded motor gasoline, which has fully vaporized, has produced kidney and liver cancers in some laboratory rodents. Ethyl benzene has been categorized as an animal carcinogen with unknown relevance to humans (A3) in the ACGIH Notice of Intended Changes (1999). IARC has concluded that there is inadequate evidence for carcinogenicity of ethanol in animals.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Pre-existing eye, skin, and respiratory disorders may be aggravated by exposure to this product. Impaired liver and kidney function from preexisting disorders may be aggravated by exposure to this product.

4. FIRST AID MEASURES

INHALATION: Remove source of contamination or move victim to fresh air. Trained personnel should begin artificial respiration if not breathing, or if heart has stopped, immediate cardiopulmonary resuscitation (CPR). Transport victim to an emergency care facility.

SKIN: Flush with water while removing contaminated clothing and shoes. Follow by washing with non abrasive soap and water. If irritation persists, get medical attention. Do not reuse clothing or shoes until cleaned.

EYE: Flush with water for 15 minutes while holding eyelids open. Get medical attention.

INGESTION: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

5. FIRE FIGHTING MEASURES

FLASH POINT:	-40°F (tag closed tester)
AUTO IGNITION TEMPERATURE:	850°F
LOWER FLAMMABLE LIMIT:	1.3
UPPER FLAMMABLE LIMIT:	7.6

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, hydrocarbons, phenols, and polynuclear aromatic hydrocarbons.

FIRE AND EXPLOSION HAZARD: *Extremely flammable.* Material will readily ignite at room temperature. Vapors can form explosive mixtures with air. Liquid can accumulate static charge by flow or agitation. *Vapors are heavier than air* accumulating in low areas and travelling along the ground away from the handling site. Do not weld, heat, or drill on or near container. If emergency situations require drilling, only trained emergency personnel should drill. Liquid can float on water and may travel to distant locations and/or spread fire.

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical, or carbon dioxide (CO_2). Do not use a direct stream of water. Product will float and can be reignited on surface of water.

SPECIAL FIRE FIGHTING PROCEDURES: Extremely flammable. Clear fire area of unprotected personnel and isolate. Isolate materials not yet involved in fire. Do not enter confined fire space without full bunker gear including a positive pressure NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water. Stop leak before putting out fire. If leak cannot be stopped and there is not risk to the surrounding area, let the fire burn itself out.

6. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES: Extremely flammable. Eliminate all ignition sources and ventilate area. Handling equipment must be grounded to prevent sparking. FOR LARGE SPILLS: Isolate the hazard area and deny entry to unnecessary personnel. Wear appropriate respirator and protective clothing. Shut off source of leak only if safe to do so. Dike and contain to prevent material from entering sewers, waterways, or confined spaces. Water fog may be useful in suppressing vapor cloud; contain run-off. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent, such as clay, sand, or other suitable material. Place in non-leaking containers for proper disposal. Flush are with water to remove trace residue; dispose of flush solutions as above. FOR SMALL SPILLS: Soak up with an absorbent material and place in non-leaking containers; seal tightly for proper disposal.

7. HANDLING AND STORAGE:

HANDLING AND STORAGE PRECAUTIONS: Extremely flammable liquid and suspect cancer hazard. Store away from heat, sparks, open flames, including pilot lights, and strong oxidizing agents. Eliminate all ignition sources. Use explosion proof ventilation systems, approved explosion proof equipment and intrinsically safe electrical systems. All handling equipment must be grounded to prevent sparking. Post "No Smoking" signs. Keep storage areas clear of combustible materials with aisles and exits free of obstruction. Ground all drums, transfer vessels, hosing, and piping. When dispensing in other than a closed system, bond dispensing container to receiving transfer equipment and container. Only use containers and transfer equipment approved for flammable liquids. Do not siphon by mouth. Label and avoid damaging containers. Empty containers may contain hazardous residues and vapors.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

EYE PROTECTION: Splash proof chemical goggles or full face shield where splashing is possible.

SKIN PROTECTION: Wear impervious protection made of nitrile rubber, polyvinyl alcohol, viton, or teflon to prevent skin contact, including boots, gloves, and appropriate clothing.

RESPIRATORY PROTECTION: When exposure limits are exceeded use NIOSH approved positive pressure or pressure demand atmosphere supplying respirator or full facepiece self contained breathing apparatus.

ENGINEERING CONTROLS: Use explosion proof, non sparking, grounded ventilation as required to control vapor concentrations. Provide local exhaust and general ventilation with sufficient make up air.

9. PHYSICAL AND CHEMICAL PROPERTIES:			
APPEARANCE/PHYSICAL STATE:	Bronze color, clear, bright liquid		
BOILING POINT:	Variable	**ODOR:**	Hydrocarbon odor
MELTING/FREEZING POINT:	Variable, less than –76°F		
SOLUBILITY IN WATER:	Slight	**pH:**	Maximum of 9
SPECIFIC GRAVITY:	0.72 – 0.76		
% VOLATILE BY WEIGHT:	100	**VAPOR DENSITY:**	3.5
VAPOR PRESSURE:	6.8 – 15.0		

10. REACTIVITY/STABILITY:
STABILITY: Stable at room temperature.
CONDITIONS OF REACTIVITY: Avoid heat, sparks, open flames, and strong oxidizing agents. Prevent vapor accumulation.
HAZARDOUS POLYMERIZATION: Will not occur
INCOMPATIBILITIES: Strong oxidizing agents.
DECOMPOSITION PRODUCTS: Carbon monoxide and other unidentified organic compounds can be formed upon combustion.

11. TOXICOLOGICAL INFORMATION:

Long Term Inhalation: Kidney injury has been observed in male rats following exposure to concentrations as low as 30 ppm gasoline. This effect has not been observed in other animal species. Rats exposed to 2,000 ppm of 1,2,4-trimethylbenzene for 6 hours/day for 12 days exhibited nose and eye irritation, respiratory difficulties, lethargy, tremors, and reduced weight gain.

LD_{50}: Gasoline

Oral: 13.6g/kg (rat)
Dermal: >5g/kg (rabbit)
Inhalation: Not determined

Irritation Index, Estimation of Irritation (Species): Gasoline

Skin: Standard Draize (rabbit) slightly irritating
Eyes: Standard Draize test (rabbit) no irritation
Sensitization: Not determined

Carcinogenicity: Studies in laboratory rats and mice exposed to constant levels of wholly vaporized unleaded gasoline at levels of 67 to 2,056 ppm gasoline for six hours per day, five days per week for two years caused kidney cancer in male rats and liver tumors in female mice. Prolonged and repeated exposure to benzene has caused leukemia, lymphoma, myeloma, and other cancers, in laboratory animals.

11. TOXICOLOGICAL INFORMATION: *cont'd.*

Teratogenicity/Embryotoxicity/Mutagenicity/Reproductive Effects: Gasoline was not mutagenic in bacterial (Ames) tests or short term in vitro tests except in one cultured mouse lymphoma cell test. Gasoline was not genotoxic in most animal tests. One study of mice given oral doses of gasoline produced a genotoxic effect, increased unscheduled DNA synthesis. No effects seen in rats exposed to 400-1,600 ppm gasoline for 6 hours/day during days 6 to 15 of pregnancy. Results cannot be evaluated due to limited study description.

Benzene: Benzene has been shown to cause fetal toxicity in laboratory animals at exposures above 50 ppm. Mild maternal toxicity (reduced weight gain) was also observed.

Ethyl Alcohol: Animal evidence clearly demonstrates that ingestion of ethanol can cause embryotoxicity, teratogenicity, and fetotoxicity in the presence of maternal toxicity. No effects were observed in one study with very high inhalation exposures, despite the observation of significant harmful effects in the mothers. Effects on reproductive organs, including decreased testicular weight, decreased numbers of motile sperm, decreased ovarian function and irregular fertility cycles, have been observed in animals given very large oral doses of ethanol. Ethanol has caused mutagenic effects in live animals. In most studies of cultured human cells, ethanol has not produced mutagenic effects (chromosomal aberrations or sister chromatid exchanges), but positive results have also been observed.

12. ECOLOGICAL INFORMATION:

Do not flush product to water bodies or sewers.

13. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD: Follow federal, state, and local regulations. Do not flush to drain or storm sewer. Whatever cannot be saved for recovery or recycling should be managed in an approved waste disposal facility.

14. TRANSPORTATION INFORMATION:

DOT CLASSIFICATION: Class 3 (flammable liquid)

DOT SHIPPING NAME: Gasoline

IDENTIFICATION NUMBER: UN 1203

PACKING GROUP: II

LABEL: Flammable Liquid

15. REGULATORY INFORMATION:

OSHA: Hazard Communication Standard (29 CFR 1910.1200) applies to those chemicals listed in Section 2. See also Benzene Standard (29 CFR 1910.1028).

TSCA: Applies to those substances listed in Section 2. Gasoline is listed for Section 8(b) chemical inventory.

CERCLA REPORTABLE QUANTITY (pounds): Toluene: 1,000 Xylene: 100 Benzene: 10 n-Hexane: 5,000 Ethylbenzene: 1,000

SARA TITLE III:

Section 302 Extremely Hazardous Substance: None

Section 311/312 Hazard Categories: Acute, chronic, fire

Section 313 Toxic Chemicals: Xylene, toluene, benzene, n-hexane, ethyl benzene, 1,2,4-trimethylbenzene

RCRA: Under EPA – RCRA (40 CFR 261.21), if this product becomes a waste material, it would be an ignitable hazardous waste, hazardous waste number D001. Refer to latest EPA or state regulations regarding proper disposal. This product contains benzene at >0.5 mg/L. Under EPA-RCRA (40 CFR 261.24), a waste containing this chemical is hazardous (hazardous waste number D018) if it exhibits the characteristics of toxicity as shown by the toxicity characteristic leaching procedure (TCLP). Refer to the latest EPA or state regulations regarding proper disposal.

STATE REGULATORY INFORMATION: The following chemicals are specifically listed by individual states; other product specific health and safety data in other section of the MSDS may also be applicable for state requirements. For details on specific regulatory requirements, contact the appropriate state agency.

COMPONENT	CAS #	%	STATE CODE
Xylene	1330-20-7	0-25	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI
Toluene	108-88-3	0-25	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI, CA Prop 65 R*
Benzene	71-43-2	0-4	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI, CA Prop 65 C/R*
n-Hexane	110-54-3	0-3	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI
Pseudocumene	95-63-6	0-5	CA, FL, MA, MN, NJ, PA
Ethanol	64-17-5	0-10	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI
Cyclohexane	110-82-7	0-1	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI
Ethylbenzene	100-41-4	0-3	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI
Naphthalene	91-20-3	0-1	CA, CT, FL, IL, LA, MA, ME, MN, NJ, PA, RI

* California Prop 65: Classes of substances known to the state of California to cause cancer (C) and/or reproductive toxicity (R).

16. OTHER INFORMATION:	
MSDS STATUS:	CURRENT
REVISION NUMBER:	Version 1.0
PREPARED BY:	Paul Carlson Associates, Inc. Milwaukie, Oregon (503) 652-6040
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